

NAME _____

DATE _____

PERIOD _____

Skip 6, 7, 14, 15

Skills Practice

Proportions

1. **FOOTBALL** A tight end scored 6 touchdowns in 14 games. Find the ratio of touchdowns per game.
2. **EDUCATION** In a schedule of 6 classes, Marta has 2 elective classes. What is the ratio of elective to non-elective classes in Marta's schedule?
3. **BIOLOGY** Out of 274 listed species of birds in the United States, 78 species made the endangered list. Find the ratio of endangered species of birds to listed species in the United States.
4. **ART** An artist in Portland, Oregon, makes bronze sculptures of dogs. The ratio of the height of a sculpture to the actual height of the dog is 2:3. If the height of the sculpture is 14 inches, find the height of the dog.
5. **SCHOOL** The ratio of male students to female students in the drama club at Campbell High School is 3:4. If the number of male students in the club is 18, what is the number of female students?

Solve each proportion.

~~6. $\frac{2}{5} = \frac{x}{40}$~~

~~7. $\frac{7}{10} = \frac{21}{x}$~~

8. $\frac{20}{5} = \frac{4x}{6}$

9. $\frac{5x}{4} = \frac{35}{8}$

10. $\frac{x+1}{3} = \frac{7}{2}$

11. $\frac{15}{3} = \frac{x-3}{5}$

Find the measures of the sides of each triangle.

12. The ratio of the measures of the sides of a triangle is 3:5:7, and its perimeter is 450 centimeters.
13. The ratio of the measures of the sides of a triangle is 5:6:9, and its perimeter is 220 meters.
14. The ratio of the measures of the sides of a triangle is 4:6:8, and its perimeter is 126 feet.
15. The ratio of the measures of the sides of a triangle is 5:7:8, and its perimeter is 40 inches.

Skip 12, 15, 18
20, 21, 8, 9

Exercises Solve each proportion. See Example 3 on page 284.

10. $\frac{3}{4} = \frac{x}{12}$

11. $\frac{7}{3} = \frac{28}{z}$

12. $\frac{x+2}{5} = \frac{14}{10}$

13. $\frac{3}{7} = \frac{7}{y-3}$

14. $\frac{4-x}{3+x} = \frac{16}{25}$

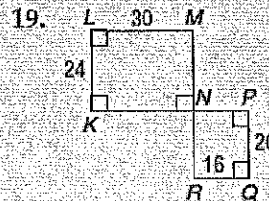
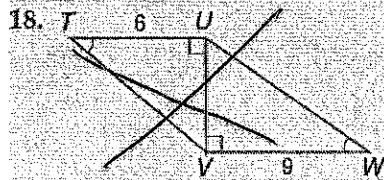
15. $\frac{x-12}{6} = \frac{x+7}{-4}$

16. **BASEBALL** A player's slugging percentage is the ratio of the number of total bases from hits to the number of total at-bats. The ratio is converted to a decimal (rounded to three places) by dividing. If Alex Rodriguez of the Texas Rangers has 263 total bases in 416 at-bats, what is his slugging percentage?

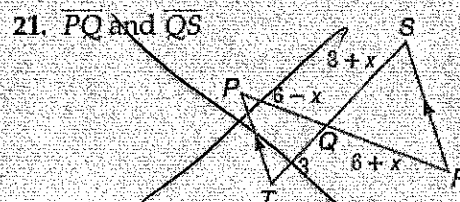
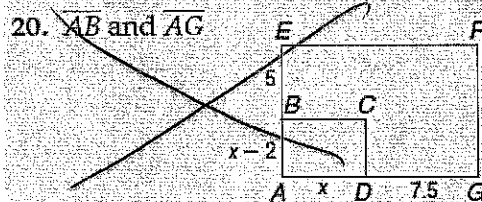
17. A 108-inch-long board is cut into two pieces that have lengths in the ratio 2:7. How long is each new piece?

Exercises Determine whether each pair of figures is similar. Justify your answer.

See Example 1 on page 290.



Each pair of polygons is similar. Write a similarity statement, and find x , the measures of the indicated sides, and the scale factor. See Example 3 on page 291.



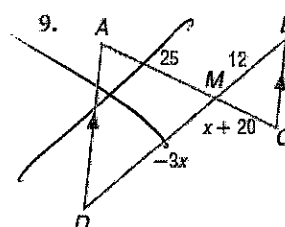
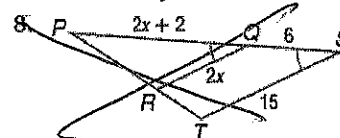
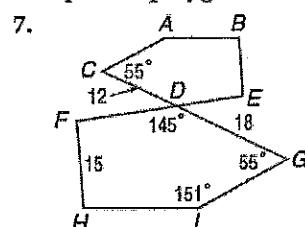
Solve each proportion.

4. $\frac{x}{14} = \frac{1}{2}$

5. $\frac{4x}{3} = \frac{108}{x}$

6. $\frac{k+2}{7} = \frac{k-2}{3}$

Each pair of polygons is similar. Write a similarity statement and find the scale factor.



- 1. ARCHITECTURE** The ratio of the height of a model of a house to the actual house is 1:63. If the width of the model is 16 inches, find the width of the actual house in feet.
- 2. CONSTRUCTION** A 64-inch long board is divided into lengths in the ratio 2:3. What are the two lengths into which the board is divided?

ALGEBRA Solve each proportion.

3. $\frac{x+4}{26} = \frac{1}{3}$

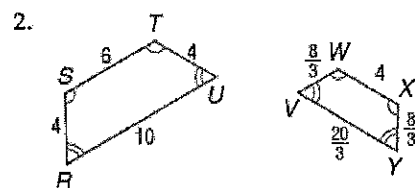
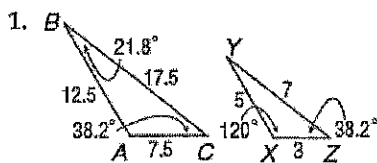
4. $\frac{3x+1}{14} = \frac{5}{7}$

5. $\frac{x-3}{4} = \frac{x+1}{5}$

6. $\frac{2x+2}{2x-1} =$

- Find the measures of the sides of a triangle if the ratio of the measures of three sides of a triangle is 9:6:5, and its perimeter is 100 inches.
- Find the measures of the angles in a triangle if the ratio of the measures of the three angles is 13:16:21.

Determine whether each pair of figures is similar. Justify your answer.

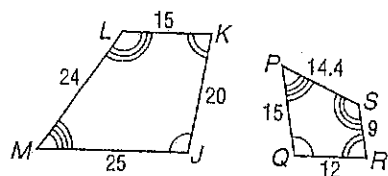


6-2 Practice

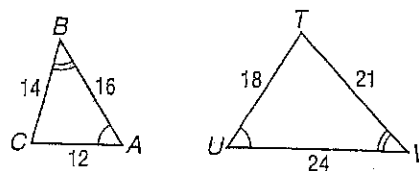
Similar Polygons

Determine whether each pair of figures is similar. Justify your answer.

1.

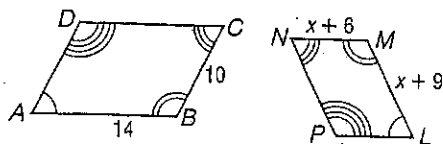


2.



Each pair of polygons is similar. Write a similarity statement, and find x , the measure(s) of the indicated side(s), and the scale factor.

3. \overline{LM} and \overline{MN}



4. \overline{DE} and \overline{DF}

